

## **REMARKS**

Applicants have received the Office Action dated December 31, 2009, in which the Examiner: 1) rejected claims 1 and 3 – 37 under 35 U.S.C. § 101 as allegedly directed to non-statutory subject matter; 2) rejected claims 1 and 3 – 37 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement; 3) rejected claims 1, 3–9, 11, 14, 15, 17, 20–25, 27, 30, 31, 33, 36, and 37 under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Patent 6,975,750 (Yan) in view of U.S. Patent 6,879,709 (Tian); 4) rejected claims 12, 13, 16, 19, 28, 29, 32, and 35 under 35 U.S.C. § 103(a) as allegedly obvious over Yan in view of Tian, and further in view of U.S. Patent 7,221,809 (Geng); and 5) rejected claims 18 and 34 under 35 U.S.C. § 103(a) as allegedly obvious over Yan in view of Tian, and further in view of “The Integration of Optical Flow and Deformable Models with Applications to Human Face Shape and Motion Estimation” (DeCarlo).

With this response, Applicant has amended claims 1 and 3–17, cancelled claims 20–37, and added new claims 38–44, which are supported by Applicant’s originally filed specification. Based on the amendments and remarks presented herein, Applicant respectfully submits that all claims are in condition for allowance.

### **I. Rejections Under 35 U.S.C. § 101**

The Examiner rejected claims 1, and 3-19 as allegedly non-statutory, and indicated that a statutory process must be (1) tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. In response, Applicant has amended claim 1 as follows:

1. A face prototype synthesis method performed by an automated image processing system, the method comprising:  
providing an image of a person’s face to the automated image processing system, said image of the person’s face comprising a plurality of pixels, said image of the

person's face including pixels corresponding to a first eye and pixels corresponding to a second eye on the person's face;

automatically creating a plurality of cropped images based upon said image of the person's face in accordance with a plurality of predetermined facial positions for a center position of the first eye and a plurality of predetermined facial positions for a center position of the second eye, each cropped image within the plurality of cropped images including pixels corresponding to the first eye and pixels corresponding to the second eye, each cropped image within the plurality of cropped images corresponding to a different facial position for at least one of a center position of the first eye and a center position of the second eye with respect to another cropped image within the plurality of cropped images;

automatically creating a plurality of face prototype images by applying a set of lighting masks and a set of warping masks to each cropped image within the plurality of cropped images, each face prototype image within the plurality of face prototype images including pixels corresponding to the first eye and pixels corresponding to the second eye, each face prototype image within the plurality of face prototype images representing a possible appearance of the person's face; and

storing the plurality of face prototype images for later analysis and comparison of with a captured image to be recognised or verified,

wherein creating the plurality of cropped images, creating the plurality of face prototype images, and storing the plurality of face prototype images are performed by the automated image processing system.

Thus, claim 1 as amended recites an automated image processing system to which an image is provided, and by which a plurality of cropped images are created, a plurality of face prototype images are created, and the plurality of face prototype images are stored. Thus, claim 1 as amended is tied to a specific machine.

Furthermore, claim 1 as amended recites that an image of a person's face is transformed into a plurality of face prototype images for later analysis and comparison

with a captured image to be recognised or verified. Thus, claim 1 as amended recites a transformation of a particular article, i.e., an image of a person's face, to a different state or thing, i.e., a plurality of face prototype images.<sup>1</sup> Amended claim 10 includes similar limitations and is statutory for much the same reasons as claim 1.

Applicant respectfully submits that claims 1 and 10 as amended satisfy the requirements of 35 U.S.C. § 101 with respect to falling within a statutory category of invention. Claims 3-9, and 11-19 depend upon claim 1. Applicant respectfully requests that the Examiner withdraw the rejection of pending claims 1 and 3-19 under 35 U.S.C. 101.

## **II. Rejections Under 35 U.S.C. § 112**

The Examiner rejected claims 1 and 3-36 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement, stating that the specification did not show support for the concept of "synthesizing the image of said actual face includes determining alternative facial positions for each eye to create the plurality of face prototypes so as to compensate for possible eye position errors."

Amended claim 1 recites a face prototype synthesis method comprising:

providing an image of a person's face to the automated image processing system, said image of the person's face comprising a plurality of pixels, said image of the person's face including pixels corresponding to a first eye and pixels corresponding to a second eye on the person's face;  
automatically creating a plurality of cropped images based upon said image of the person's face in accordance with a plurality of predetermined facial positions for a center position of the first eye and a plurality of predetermined facial positions for a center position of the second eye, each cropped image within the plurality of cropped images including pixels corresponding to the first eye and pixels

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<sup>1</sup> See *In re Bilski*, 545 F.3d 943, 962-963 (Fed. Cir. 2008) (explaining that processing of images of a human body is statutory).

corresponding to the second eye, each cropped image within the plurality of cropped images corresponding to a different facial position for at least one of a center position of the first eye and a center position of the second eye with respect to another cropped image within the plurality of cropped images;  
automatically creating a plurality of face prototype images by applying a set of lighting masks and a set of warping masks to each cropped image within the plurality of cropped images, each face prototype image within the plurality of face prototype images including pixels corresponding to the first eye and pixels corresponding to the second eye, each face prototype image within the plurality of face prototype images representing a possible appearance of the person's face; and  
storing the plurality of face prototype images for later analysis and comparison with a captured image to be recognised or verified,  
wherein creating the plurality of cropped images, creating the plurality of face prototype images, and storing the plurality of face prototype images are performed by the automated image processing system.

*Limitation (1)*

Claim 1 as amended recites providing an image of a person's face to an automated image processing system. Applicant's Abstract and paragraph 10 of the specification teach an image processing system such as a face recognition or face verification system in which an image of a person's actual face is captured, such that the image of the person's face is provided to the system. Image capture is very well known to result in images comprising pixels. Applicant's specification refers to pixels of facial images in multiple paragraphs (e.g., paragraphs 26, 28, 30, 45, 51, 54, and elsewhere). Multiple Figures in the originally filed specification provide representative images of a person's face, where such images depict eyes on the face, and hence include pixels corresponding to a first eye and pixels corresponding to a second eye.

Thus, clear support exists for claim 1 as amended for providing an image of a person's face to the automated image processing system, the image comprising a

plurality of pixels, the image including pixels corresponding to a first eye and pixels corresponding to a second eye on the person's face.

*Limitation (2)*

Claim 1 as amended recites automatically creating a plurality of cropped images based upon said image of the person's face in accordance with a plurality of predetermined facial positions for a center position of the first eye and a plurality of predetermined facial positions for a center position of the second eye, each cropped image within the plurality of cropped images including pixels corresponding to the first eye and pixels corresponding to the second eye, each cropped image within the plurality of cropped images corresponding to a different facial position for at least one of a center position of the first eye and a center position of the second eye with respect to another cropped image within the plurality of cropped images.

Applicant's originally filed specification specifically teaches in paragraph 27 that an error position is assumed for the eyes, and for each of two eyes' possible positions in view of multiple possible positions for the two eyes, an image of a person's face is cropped accordingly, resulting in the creation of a cropped image.

Paragraphs 27 and 28 are directed to the creation of cropped images, and describe a representative example of cropped image creation in association with FIG. 2.

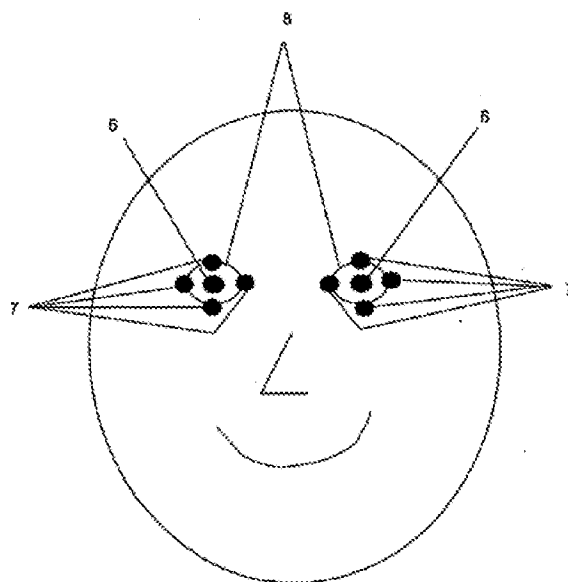


Figure 2

As taught in paragraph 28, for a given eye, a circle 8 describes a surface error defining a probable real position of the eye. As taught in paragraph 27, the dots indicated by reference numeral 6 are the detected or determined center positions of the eyes, as detected or determined by an existing face location system. Paragraph 27 also teaches that it is likely that center positions of the eyes as detected or determined by an existing face location system are imprecise. In other words, the detected center position 6 of a first eye and the detected position 6 of a second eye may not adequately match the actual center position of the first eye and the center position of the second eye, respectively, due to eye position errors. The dots indicated by reference numeral 7 are predetermined alternative center positions of the eyes in relation to the detected positions 6 for the center positions of the eyes.

As indicated in paragraphs 27 and 28 in view of the example of FIG. 2, a plurality of predetermined facial positions are considered for a center position of the first eye, and a plurality of predetermined facial positions are considered for a center position of the second eye. A plurality of cropped images is created in accordance with the

plurality of predetermined facial positions for the center of the first eye and the plurality of predetermined facial positions for the center of the second eye.

More particularly, FIG. 2 illustrates five predetermined facial positions for the center position of the first eye and five predetermined facial positions for the center position of the second eye, which result in the creation of  $5 \times 5 = 25$  cropped images as stated in paragraph 27. Considering the eye shown on the left side of FIG. 2 as the first eye, FIG. 2 clearly indicates the consideration of 5 distinct or non-identical predetermined facial positions for the first eye. For any single facial position for the first eye considered among the 5 predetermined facial positions for the first eye, 5 cropped images are created corresponding to this single predetermined facial position for the first eye, where these 5 created cropped images correspond to 5 distinct predetermined facial positions for the second eye.

In view of the foregoing, paragraphs 27 and 28 in association with the representative example shown in FIG. 2 provide support for automatically creating a plurality of cropped images based upon said image of the person's face in accordance with a plurality of predetermined facial positions for a center position of the first eye and a plurality of predetermined facial positions for a center position of the second eye, each cropped image within the plurality of cropped images including pixels corresponding to the first eye and pixels corresponding to the second eye, each cropped image within the plurality of cropped images corresponding to a different facial position for at least one of a center position of the first eye and a center position of the second eye with respect to another cropped image within the plurality of cropped images.

### *Limitation (3)*

Claim 1 as amended additionally recites automatically creating a plurality of face prototype images by applying a set of lighting masks and a set of warping masks to each cropped image within the plurality of cropped images, each face prototype image within the plurality of face prototype images including pixels corresponding to the first eye and pixels corresponding to the second eye, each face prototype image within the

plurality of face prototype images representing a possible appearance of the person's face.

Paragraph 29 of Applicant's specification teaches that for each cropped image, "predefined 2D lighting masks and predefined 2D warping or morphing masks" are applied to obtain multiple "face prototypes that are likely to appear." Applicant's FIG. 9 as well as other Figures clearly indicate that each of a plurality of face prototype images includes pixels corresponding to the first eye and pixels corresponding to the second eye. Paragraph 24 of Applicant's specification teaches the synthesis of face prototypes, which represent the possible appearances of the initial face under various conditions (including modeling error conditions associated with an eye position detection process).

Thus, Applicant's originally filed specification clearly supports automatically creating a plurality of face prototype images by applying a set of lighting masks and a set of warping masks to each cropped image within the plurality of cropped images, each face prototype image within the plurality of face prototype images including pixels corresponding to the first eye and pixels corresponding to the second eye, each face prototype image within the plurality of face prototype images representing a possible appearance of the person's face.

*Limitations (2) and (3) considered together*

Claim 1 as amended includes the following limitations:  
automatically creating a plurality of cropped images based upon said image of the person's face in accordance with a plurality of predetermined facial positions for a center position of the first eye and a plurality of predetermined facial positions for a center position of the second eye, each cropped image within the plurality of cropped images including pixels corresponding to the first eye and pixels corresponding to the second eye, each cropped image within the plurality of cropped images corresponding to a different facial position for at least one of a center position of the first eye and a center position of the second eye with respect to another cropped image within the plurality of cropped images;



automatically creating a plurality of face prototype images by applying a set of lighting masks and a set of warping masks to each cropped image within the plurality of cropped images, each face prototype image including pixels corresponding to the first eye and pixels corresponding to the second eye, each face prototype image within the plurality of face prototype images representing a possible appearance of the person's face...

Thus, claim 1 as amended recites the creation or generation of a plurality of face prototype images. Applicant's Abstract teaches that an image of a person's face is "synthesized to create a plurality of face prototypes." Paragraph 24 teaches "the system automatically synthesizes a multitude of face prototypes." Paragraph 69 teaches "Given a face image and the two eyes positions, the present system is able to synthesize realistic faces from a single face" by way of "the creation of a multitude of synthetic faces that are likely to be encountered during the future face recognition tasks." Paragraph 68 teaches "non-linear geometric transformations, and non-linear photometric transformations, to synthesize realistic face prototypes."

Claim 1 as amended recites that the plurality of face prototypes is created by applying a set of lighting masks and a set of warping masks to each cropped image within the plurality of cropped images. As recited in claim 1 as amended and as supported by Applicant's specification in view of the preceding remarks, each cropped image within the plurality of cropped images includes pixels corresponding to the first eye as well as pixels corresponding to the second eye, and each cropped image within the plurality of cropped images corresponds to a different facial position for at least one of a center position of the first eye and a center position of the second eye.

Thus, creating the plurality of face prototypes includes applying a set of lighting masks and a set of warping masks to each cropped image within a plurality of cropped images, where the plurality of cropped images indicates a determination of alternative facial positions for each eye. As taught in Applicant's originally filed specification, such

alternative facial positions for each eye are determined to compensate for possible eye position errors.

Therefore, the process of creating the plurality of face prototypes, which Applicant's specification refers to as an image synthesis process, incorporates or includes a determination of alternative facial positions for each eye, in order to compensate for possible eye position errors.

On page 5 of the Office Action, Examiner asserts that "no where in the specification was found to show the support for the concept of 'synthesizing the image of said actual face includes determining alternative facial positions for each eye to create the plurality of face prototypes so as to compensate for possible eye position errors.'" In view of the foregoing, Applicant respectfully submits that Examiner's assertion in regard to a lack of support in Applicant's specification is erroneous.

Notwithstanding, Applicant has amended claim 1 to clearly indicate what such conceptual synthesis involves, and has in the context of the remarks herein identified portions of Applicants originally filed specification in view of amended claim 1 to enhance clarity, aid understanding, and establish explicit specification support.

#### *Limitation (4)*

Claim 1 as amended further recites storing the plurality of face prototype images for later analysis and comparison with a captured image to be recognised or verified. Applicant's Abstract teaches that face prototypes are stored for later analysis and comparison with a captured image to be recognised or verified. Paragraph 24 of Applicant's specification teaches the synthesis or creation of face prototype images, and further teaches that the face prototype images represent the possible appearances of an initial face. Paragraph 66 teaches "storing multiple possible appearances of the same face."

Thus, Applicant's originally filed specification supports storing the plurality of face prototype images for later analysis and comparison with a captured image to be recognised or verified.

In view of the foregoing remarks, Applicant submits that claim 1 as amended is clearly and explicitly supported by Applicant's originally filed specification. Amended claim 10 includes similar limitations, and finds enabling support in the specification for reasons similar to those given above with regard to claim 1. Other pending claims rejected under 35 U.S.C. 112, first paragraph, depend from independent claim 1. Applicant respectfully requests that Examiner withdraw the rejection of pending claims 1, and 3-19 under 35 U.S.C. 112, first paragraph.

### **III. Rejections Under 35 U.S.C. § 103(a)**

#### **A. Rejections Over Yan in View of Tian**

The Examiner rejected claims 1, 3-9, 11, 14, 15, 17, 20-25, 27, 30, 31, 33, 36, and 37 under 35 U.S.C. 103(a) as being unpatentable over Yan in view of Tian. Claims 20-25, 27, 30, 31, 33, 36, and 37 have been cancelled.

Claim 1 as amended includes the following limitations:

automatically creating a plurality of cropped images based upon said image of the person's face in accordance with a plurality of predetermined facial positions for a center position of the first eye and a plurality of predetermined facial positions for a center position of the second eye, each cropped image within the plurality of cropped images including pixels corresponding to the first eye and pixels corresponding to the second eye, each cropped image within the plurality of cropped images corresponding to a different facial position for at least one of a center position of the first eye and a center position of the second eye with respect to another cropped image within the plurality of cropped images;

automatically creating a plurality of face prototype images by applying a set of lighting masks and a set of warping masks to each cropped image within the plurality of cropped images, each face prototype image within the plurality of face prototype images including pixels corresponding to the first eye and pixels corresponding to the second eye, each face prototype image within the plurality of face prototype images representing a possible appearance of the person's face; and

storing the plurality of face prototype images for later analysis and comparison with a captured image to be recognised or verified...

Thus, claim 1 as amended includes creating a plurality of cropped images based upon said image of the person's face in accordance with multiple predetermined facial positions for the first eye's center position and multiple predetermined facial positions for the second eye's center position. Each cropped image includes pixels corresponding to the first eye as well as pixels corresponding to the second eye, and each cropped image corresponds to a different facial position for at least one of a center position of the first eye and a center position of the second eye with respect to another cropped image. Claim 1 as amended additionally includes creating multiple face prototype images by applying a set of lighting masks and a set of warping masks to each cropped image. Claim 1 as amended further recites storing the plurality of face prototype images for later analysis and comparison with a captured image to be recognised or verified.

With respect to Yan, a specific 3-D face model of a given subject is determined through the application of an iterative deformation technique to a generic 3-D face model. The deformation technique involves a cost function, and finding the cost function's minimum (i.e., solving a minimization problem). The subject-specific 3-D face model corresponds to the cost function's minimum. Yan begins with a generic 3-D face model, to which successive deformation processes are iteratively applied to produce intermediate 3-D face models. Given the iterative nature of Yan's deformation process, arriving at the subject-specific 3-D face model involves a final deformation iteration that is applied to a final intermediate 3-D face model.

As taught in col. 11, beginning at line 65, once Yan determines the subject-specific 3-D face model, Yan generates "realistic individual virtual faces or 2-D face images" from the subject specific 3-D face model. The 2-D face images are synthesized from the subject specific 3-D face model as virtual images at various poses. The virtual images can include images at various illuminations. Yan further teaches in

col. 12, beginning at line 12, that the virtual images can be used in to train a face recognition system. Thus, Yan teaches the generation of a subject-specific 3-D face model, and the generation of virtual faces from the subject-specific 3-D face model, where the virtual images can include images at various illuminations, and can be used to train a facial recognition system.

In contrast to Applicant's claim 1, Yan does not teach or suggest the generation a plurality of cropped images in accordance with a plurality of predetermined facial positions for the center position of the first eye and a plurality of predetermined facial positions for the center position of the second eye.

In arriving at Yan's subject-specific 3-D face model, any intermediate 3-D face models (i.e., non-final iterations of the generic 3-D face model) are not themselves used to synthesize virtual images. That is, no "realistic individual virtual faces or 2-D face images" are generated from any of Yan's 3-D face models other than the subject-specific face model. All intermediate 3-D face models that are generated as a result of iterative operations performed upon the generic 3-D face model prior to determining the subject-specific 3-D face model are used only in a process of further iteration to arrive at the final subject-specific 3-D face model. Furthermore, no intermediate 3-D face models are used to train images for a recognizer of a face recognition system. None of Yan's intermediate 3-D face models are stored or even used for analysis or comparison operations between an intermediate 3-D face model and a captured image for the purpose of recognizing or verifying the captured image.

Yan does not teach or even suggest application of a set of lighting masks and a set of warping masks to a plurality of cropped images that are generated in accordance with multiple predetermined facial positions for the first eye and multiple predetermined facial positions for the second eye, nor does Yan teach or suggest storing the images resulting from the application of a set of lighting masks and a set of warping masks to such cropped images corresponding to the multiple predetermined first eye center positions and the multiple predetermined second eye center positions for the purpose of

comparing these resulting images with a captured image to be recognized or verified, as required by Applicant's claim 1.

Tian teaches a face processing system that determines facial components within a facial image, and which extracts geometrical mouth zone features that are input into a facial expression classifier to determine whether the facial image corresponds to a neutral expression.

Nowhere does Tian teach or suggest the generation of a plurality of cropped images in accordance with a plurality of predetermined facial positions for the center position of the first eye and a plurality of predetermined facial positions for the center position of the second eye as required by Applicant's claim 1. Nowhere does Tian teach or suggest the application of a set of lighting masks and a set of warping masks to a plurality of cropped images that are generated in accordance with multiple predetermined facial positions for the first eye and multiple predetermined facial positions for the second eye. Tian further fails to teach or suggest storing the images resulting from the application of a set of lighting masks and a set of warping masks to such cropped images corresponding to the multiple predetermined first eye center positions and the multiple predetermined second eye center positions for the purpose of comparing these resulting images with a captured image to be recognized or verified, as required by Applicant's claim 1.

Applicant respectfully submits that no teaching or suggestion provided in Yan and/or Tian results in or would lead one of ordinary or other skill in the art to or toward the invention of amended claim 1. Applicant therefore respectfully submits that claim 1 as amended is nonobvious over Yan in view of Tian. Applicant therefore respectfully requests Examiner withdraw the rejection of amended claim 1 and pending claims 3-9, 11, 14, 15, and 17 depending from claim 1 under 35 U.S.C. 103(a) based upon Yan in view of Tian.

**B. Rejections Over Yan and Tian in View of Geng**

The Examiner rejected claims 12, 13, 16, 19, 28, 29, 32, and 35 under 35 U.S.C. § 103(a) as being unpatentable over Yan in view of Tian, and further in view of Geng. Claims 28, 29, 32, and 35 have been cancelled.

Geng teaches a facial recognition system in which virtual faces are produced from captured 3D facial images. The virtual faces can be generated under different lighting conditions.

In contrast to Applicant's claimed invention, Geng fails to teach or suggest the generation of a plurality of cropped images in accordance with a plurality of predetermined facial positions for the center position of the first eye and a plurality of predetermined facial positions for the center position of the second eye, as required by Applicant's claimed invention. Geng further fails to teach or suggest the application of a set of lighting masks and a set of warping masks to a plurality of cropped images that are generated in accordance with multiple predetermined facial positions for the first eye and multiple predetermined facial positions for the second eye. Geng additionally fails to teach or suggest storing the images resulting from the application of a set of lighting masks and a set of warping masks to such cropped images corresponding to the multiple predetermined first eye center positions and the multiple predetermined second eye center positions for the purpose of comparing these resulting images with a captured image to be recognized or verified.

Applicant respectfully submits that Yan, Tian, and Geng, in any combination, fail to teach or suggest the limitations of amended claim 1. Therefore, Applicant further submits that claim 1 as amended is nonobvious over Yan in view of Tian and further in view of Geng. Applicant respectfully requests that the Examiner withdraw the rejection of pending claims 12, 13, 16, and 19 over Yan, Tian, and Geng.

### **C. Rejections Over Yan and Tian in View of DeCarlo**

The Examiner rejected claims 18 and 34 under 35 U.S.C. § 103(a) as being unpatentable over Yan in view of Tian, and further in view of DeCarlo. Claim 34 has been cancelled.

Applicant respectfully submits that DeCarlo fails to satisfy the deficiencies of Yan and Tian explained above with regard to independent claim 1. Therefore, no combination of any teaching or suggestion in Yan, Tian, and/or DeCarlo results in or leads to or toward the invention of Applicant's claim 1 as amended, and hence claim 1 as amended is nonobvious over Yan in view of Tian and further in view of DeCarlo. Applicant respectfully requests Examiner withdraw the rejection of claim 18 under 35 U.S.C. § 103(a) based upon Yan in view of Tian and further in view of DeCarlo.

### **IV. Allowable Subject Matter**

The Examiner indicated that claims 10 and 26 would be allowable if rewritten to include all of the limitations of a parent claim and any intervening claims, in a manner that overcomes the rejections under 35 U.S.C. § 101 and 35 U.S.C. § 112, first paragraph, set forth in the Office Action.

Applicant has cancelled claim 26. Applicant has amended claim 10 in independent form to include all of the limitations of its parent claim 1, and has further amended claim 10 to overcome Examiner's rejections under 35 U.S.C. § 101 and 35 U.S.C. § 112, first paragraph (for reasons similar to those given above with regard to claim 1). More particularly, claim 10 as amended now recites the following:

10. A face prototype synthesis method performed by an automated image processing system, the method comprising:

providing an image of a person's actual face to the automated system, said image of the person's actual face including pixels corresponding to a first eye and pixels corresponding to a second eye within a pair of eyes; and



automatically registering said image of a person's actual face by performing the steps of:

- normalizing said image of the person's actual face by applying at least one of translational, rotational, and scalar transformation to said image of the person's actual face;
- determining alternative facial positions for each eye so as to compensate for possible eye position modeling errors;
- producing cropped images of said image of the person's actual face, based upon the determined alternative facial positions for each eye; and
- creating a plurality of face prototypes using said cropped images, said face prototypes representing possible appearances of the person's actual face under modeling errors corresponding to errors in a detected position of a pair of eyes on the face, and possible appearances of the person's actual face under various lighting conditions, varying facial expressions, or varying facial orientations.

#### **V. New Claims 38-44**

Applicant has added new claims 38–44 by way of this response. Applicant respectfully submits that new claims 38–44 are supported by Applicant's originally filed specification.

#### **VI. Conclusion**

Applicants respectfully request reconsideration and that a timely Notice of Allowance be issued in this case. Applicants believe a two-month extension of time is necessary for this response and thus so petition. However, in the event that additional extensions of time are necessary to allow for consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims and for extensions of time) are hereby

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**Amendment Dated June 1, 2010**  
**Reply to Office Action of December 31, 2009**

authorized to be charged to Conley Rose, P.C.'s Deposit Account No. 03-2769/2085-02800 for such fees.

Respectfully submitted,

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